



IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 1. (Previously Presented) A method for generating a spot for use in
2 halftoning, comprising:

3 defining a spot function that combines two functions selected to provide a
4 predetermined spot shape for use in a halftone cell; and
5 scaling the spot function using a parameterized spot radius scaling function that varies
6 according to a value of a first and second spot function ordinate and a shape changing scaling
7 function,

8 wherein the spot function is described by:

$$9 \quad f(x,y) = \frac{1}{2} \left(\cos(\pi x / p_x) + \frac{1}{S(p,r)} \cos(\pi y / p_y) \right)$$

10 where x and y are the first and second spot function ordinates, p_x scales ordinate x, p_y scales
11 ordinate y, p is a spot shape parameter for controlling the shape of the spot, $S(p,r)$ is a scaling
12 function, and r is the radius of the spot.

1 2. (Previously Presented) The method of claim 1, wherein the two
2 functions allow non-separable changes in spot shape.

1 3. (Canceled)

1 4. (Canceled)

1 5. (Previously Presented) The method of claim 1, wherein the scaling
2 function, S(p,r), is described by:

3

$$S(p,r) = 1 + \frac{1}{p_m \sqrt{2\pi}} \exp\left(-\frac{(r/\sqrt{2} - 1/2)^2}{2p^2}\right),$$

4 where p_m sets a maximum ellipticity of the spot.

1 6. (Canceled)

1 7. (Previously Presented) A printing system, comprising:
2 a control unit for receiving a print file and processing the print file for printing;
3 a print head for conveying a print job according to the print file; and
4 a device for generating a spot for use in halftoning wherein the halftoning reproduces
5 an image defined by the print file using the print head, the device defines a spot function that
6 combines two functions selected to provide a predetermined spot shape for use in a halftone
7 cell and scales the spot function using a parameterized spot radius scaling function that varies
8 according to a value of a first and second spot function ordinate and a shape changing scaling
9 function,

10 wherein the spot function used by the device is described by:

11

$$f(x, y) = \frac{1}{2} \left(\cos(\pi x / p_x) + \frac{1}{S(p, r)} \cos(\pi y / p_y) \right)$$

12 where x and y are the first and second spot function ordinates, p_x scales ordinate x, p_y scales
13 ordinate y, p is a spot shape parameter for controlling the shape of the spot, S(p,r) is a scaling
14 function, and r is the radius of the spot.

1 8. (Previously Presented) The printing system of claim 7, wherein the two
2 functions allow non-separable changes in spot shape.

1 9. (Canceled)

1 10. (Canceled)

1 11. (Previously Presented) The printing system of claim 7, wherein the
2 scaling function, S(p,r), is described by:

3
$$S(p,r)=1+\frac{1}{p_m \sqrt{2\pi}} \exp\left(-\frac{(r/\sqrt{2}-1/2)^2}{2p^2}\right),$$

4 where p_m sets a maximum ellipticity of the spot.

1 12. (Canceled)

1 13. (Previously Presented) The printing system of claim 7, wherein the
2 device is a hardware card disposed between the control unit and the print head.

1 14. (Previously Presented) The printing system of claim 7, wherein the
2 device is a hardware card disposed within the control unit.

1 15-16. (Canceled)

1 17. (Previously Presented) An article of manufacture comprising a program
2 storage medium readable by a computer, the medium tangibly embodying one or more
3 programs of instructions executable by the computer to perform a method for halftoning an
4 image, the method comprising:

5 defining a spot function that combines two functions selected to provide a
6 predetermined spot shape for use in a halftone cell; and
7 scaling the spot function using a parameterized spot radius scaling function that varies
8 according to a value of a first and second spot function ordinate and a shape changing scaling
9 function,

10 wherein the spot function is described by:

$$11 \quad f(x,y) = \frac{1}{2} \left(\cos(\pi x / p_x) + \frac{1}{S(p,r)} \cos(\pi y / p_y) \right)$$

12 where x and y are the first and second spot function ordinates, p_x scales ordinate x, p_y scales
13 ordinate y, p is a spot shape parameter for controlling the shape of the spot, $S(p,r)$ is a scaling
14 function, and r is the radius of the spot.

1 18. (Previously Presented) The article of manufacture of claim 17, wherein
2 the two functions allow non-separable changes in spot shape.

1 19. (Canceled)

1 20. (Canceled)

1 21. (Previously Presented) The article of manufacture of claim 17, wherein
2 the scaling function, S(p,r), is described by:

3

$$S(p,r) = 1 + \frac{1}{p_m \sqrt{2\pi}} \exp\left(-\frac{(r/\sqrt{2} - 1/2)^2}{2p^2}\right),$$

4 where p_m sets a maximum ellipticity of the spot.

1 22. (Canceled)

23. (Previously Presented) A printing system, comprising:
means for receiving a print file and processing the print file for printing;
means for conveying a print job according to the print file; and
means for generating a spot for use in halftoning wherein the halftoning reproduces an
image defined by the print file using the print head, the means for generating a spot defines a
spot function that combines two functions selected to provide a predetermined spot shape for use
in a halftone cell and scales the spot function using a parameterized spot radius scaling function
that varies according to a value of a first and second spot function ordinate and a shape changing
scaling function,

wherein the spot function is described by:

$$f(x,y) = \frac{1}{2} \left(\cos(\pi x / p_x) + \frac{1}{S(p,r)} \cos(\pi y / p_y) \right)$$

where x and y are the first and second spot function ordinates, p_x scales ordinate x, p_y scales
ordinate y, p is a spot shape parameter for controlling the shape of the spot, S(p,r) is a scaling
function, and r is the radius of the spot.